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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/806,811	03/23/2004	Krishnakant P. Vora	59575US002	4147

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3M INNOVATIVE PROPERTIES COMPANY
PO BOX 33427
ST. PAUL, MN 55133-3427

EXAMINER	
BRUENJES, CHRISTOPHER P	
ART UNIT	PAPER NUMBER
1772	

DATE MAILED: 03/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/806,811	VORA, KRISHNAKANT P.	
	Examiner	Art Unit	
	Christopher P. Bruenjes	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) *28-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *1-33* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *20060127, 20050711,* 20040323.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-27, drawn to a tubular article, classified in class 428, subclass 36.9.

II. Claims 28-33, drawn to a method of making a tubular article, classified in class 264, subclass 482.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make another and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product as claimed can be made by another and materially different process such as forming the indicia on the outer surface of the tubular article prior to expanding the tubular article.

3. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

4. During a telephone conversation with Melanie Gover on November 3, 2005 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-27. Affirmation of this election must be made by applicant in replying to this Office action. Claims 28-33 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-18 and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, the limitation "in an expanded state" renders the claim vague and indefinite because it is not understood if a product is being claimed at a certain time. Are you only claiming the tubular article when it is in an expanded state, and not claiming it when it is relaxed? Furthermore, what is considered an expanded state? Is a tubular article in an expanded state as long as it is not compressed?

Regarding claims 15 and 27, it is not understood how the weight percentages of the components fail to add up to 100%. By not adding up to 100% it leads one of ordinary skill in the art to believe that there is at least one other required component in the mixture that is not being claimed.

Regarding claim 18, the limitation "when tested pursuant to ASTM D412" renders the claim vague and indefinite because it is not understood if the claim is requiring the tubular article to have been subjected to the method of ASTM D412. Also, ASTM D412 is a changing method, and therefore it is not clear exactly what method is being referred to, when claiming a standard that is capable of revision.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-2, 8-10, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (EP 710 570 A1).

Regarding claims 1-2, Lee et al anticipate a tubular article having an outer surface (see abstract). Note the limitation "in an expanded state" is given its broadest reasonable interpretation, which is that as long as the tubular article is not compressed it is expanded, so therefore in tubular article without a compressing force placed upon it would read on an expanded state. The tubular article comprises a mixture comprising an elastomer comprising a terpolymer of ethylene-propylene-diene monomer (p.5, l.10-14), a pigment (p.6, l.56-57), and an energy beam absorber such as carbon black (see abstract). Focused energy beam-induced indicia are located on the outer surface of the article (see abstract). The tubular article is capable of being placed in a relaxed state, since the article is made of elastomer. The indicia is legible to an unaided eye of an individual with 20/20 vision located at least

about 36 centimeters away from the indicia when the tubular article is in the expanded state and when the tubular article is in the relaxed state, since the entire purpose of applying the indicia to the cable jacket is so that someone with unaided eye is able to read the indicia. Regarding claim 8, the mixture further comprises an antioxidant material (p.6, l.52-55). Regarding claims 9-10, the indicia comprises a first color determined in part by the energy beam absorber, and the outer surface comprises a second color determined in part by the pigment, in which the second color is selected from a group consisting of white and yellow, since the pigment is titanium dioxide (p.6, l.56-57). Regarding claim 15, the energy beam absorber constitutes 0.1 to 0.7wt% of the mixture and the pigment constitutes 1wt% of the mixture (p.14, l.27-32). The elastomer makes up at least a majority of the rest of the mixture so therefore the elastomer constitutes at least about 25% to about 40% by weight. Note the fact that the percentages do not add to 100% and the claim is open, the elastomer concentration can be determined as two concentrations of the same elastomer to fulfill the range claimed.

9. Claims 1, 5, 7-9 and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Lunk et al (WO 90/08805 A1).

Regarding claim 1, Lunk et al anticipate a heat recoverable tubular article having an outer surface (see abstract). Heat recoverable inherently means that the article has an expanded state and relaxed state. In addition Lunk et al describes the heat recoverable article as including an article in which an extruded tube is expanded, while hot, to a dimensionally heat-unstable form (p.10, l.1-5), which would be a type of cold-shrink tube. The tubular article comprises a mixture comprising a fluoropolymer elastomer (p.4, l.5-7), a pigment (p.7, l.11-13) and the organic compound for enhancing a mark, which is also a pigment (see abstract), and an energy beam absorber (p.4, l.22-30). The article further comprises a focused energy beam-induced indicia located on the outer surface (see abstract). The indicia is legible to an unaided eye of an individual with 20/20 vision located at least about 36 centimeters away from the indicia when the tubular article is in the expanded state and when the tubular article is in the relaxed state, since the entire purpose of applying the indicia to the heat recoverable marker sleeve is so that someone with unaided eye is able to read the indicia. Regarding claim 5, the mixture further comprises peroxide (p.7, l.25-28). Regarding claim 7, the mixture further comprises zinc oxide (p.7, l.11-13). Regarding claim 8, the mixture further comprises antioxidant (p.6, l.27-

31). Regarding claim 9, the indicia comprises a first color determined in part by the energy beam absorber, and the outer surface comprises a second color determined in part by the pigment (see abstract and p.7, l.11-13). Regarding claim 15, the energy beam absorber constitutes 2wt% of the mixture (p.4, l.18-24). The pigment constitutes an amount within the claimed range of 1 to 5wt% since the pigment is an additive and the organic compound for enhancing a mark, which is a type of pigment, is found in an amount between 1 and 15wt%. The elastomer makes up at least a majority of the rest of the mixture so therefore the elastomer constitutes at least about 25% to about 40% by weight. Note the fact that the percentages do not add to 100% and the claim is open, the elastomer concentration can be determined as two concentrations of the same elastomer to fulfill the range claimed.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the

art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

12. Claims 1-10, 13-21, and 23-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yau (USPN 5,080,942) in view of Lee et al (EP 710 570 A1).

Yau teaches a pre-stretched or cold-shrink tubular article in an expanded state having an outer surface (see abstract). The tubular article comprises a mixture comprising an elastomer comprising 10 to 50wt% EPDM (col.3, l.18-22), 10 to 30 wt% hydrocarbon oil (col.3, l.42-56), filler such as silica (col.3, l.57-66) or clay (col.4, l.12-15), silane coupling agent, acrylic co-agent, zinc oxide, peroxide, and antioxidant (col.4, l.29-35). The antioxidant and zinc oxide constitute weight percent of the mixture within the claim ranges of claim 27 (col.7, l.1-23). The inner diameter of the tubular article

increases about 150% to about 300% when expanded (col.5, l.34-37), and the article has an elongation at break of at least 600% (col.6, l.44).

Yau fails to teach the mixture further comprising a pigment and energy beam absorber used to form focused energy beam-induced indicia on the outer surface of the article. However, Yau teaches that the tubular article is used as a sleeve for supporting cables (col.10, l.48-50) and Lee et al teach that sleeves for supporting cables are marked with indicia for identification and safety purposes (p.2, l.7-10). Lee et al also teach that common printing methods suffer from a combination of slow processing, lack of labeling durability and the absence of resistance to marring (p.2, l.13-15). Therefore, Lee et al teach that a pigment and energy beam absorber are added to an EPDM cable sleeve in order to enable focused energy beam-induced indicia to be applied to the outer surface of the sleeve (see abstract and p.6, l.56-57). One of ordinary skill in the art would have recognized that Yau and Lee et al are analogous insofar as both references are concerned with forming sleeves for cables and that indicia is applied to the outer surface of sleeves in order to provide required identification and safety information, as taught by Lee et al.

Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to add a pigment and energy beam absorber selected form Lee et al and to apply indicia using a laser, as taught by Lee et al to the tubular sleeve of Yau in order to provide indicia that is durable and resistant to marring, as taught by Lee et al.

Regarding claims 13-14, the thickness of the tubular article would be determined through routine experimentation and would be selected in within the claimed ranges since Yau teaches a heat recoverable tubular article similar to the claimed invention that has the same purpose of supporting cables and/or wires, absent the showing of unexpected result.

13. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yau in view of Lee et al as applied to claims 1 and 10 and in further view of Sakai et al (USPN 5,373,039).

Yau and Lee et al taken as a whole teach all that is claimed in claims 1 and 10 as shown above, but fail to teach that the laser-induced indicia is formed by charring or foaming a portion of the outer surface of the article. However, Sakai et al teach that is well known in the art that laser-induced indicia are formed by three methods, including changes in color, charring, and foaming (col.1, l.35-57). Therefore, it would

have been obvious to one having ordinary skill in the art at the time Applicant's invention was made that any of the methods would be interchangeable depending on the intended end result of the indicia and article.

Thus, it would have been obvious to one having ordinary skill in the art to form the laser-induced indicia on the outer surface of the article of Yau and Lee et al by charring or foaming a portion of the outer surface as well as color change presented in Lee et al, since the three methods are interchangeable and one of ordinary skill in the art selects the appropriate method depending on the intended end result of the article, as taught by Sakai et al.

14. Claims 3-4, 19-20, 22, and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lunk et al in view of Hert et al (USPN 5,643,526).

Lunk et al teach all that is claimed in claims 1 and 7-8, but fail to teach adding filler, silane coupling agent, and hydrocarbon oil to the mixture. However, Hert et al teach that tubular articles formed of fluoroelastomer and modified to improve mechanical properties by adding silica or clay that is surface treated with a silane coupling agent (col.5, l.54-61) and to soften the composition using a plasticizer such as

mineral oils derived form petroleum, which includes hydrocarbon oils (col.5, l.62-64). Therefore, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to add silica or clay surface treated with silane in order to improve mechanical properties and hydrocarbon mineral oil in order to soften a fluoroelastomer based tubular article, as taught by Hert et al.

Thus, it would have been obvious to one having ordinary skill in the art at the time Applicant's invention was made to add silica or clay surface treated with silane and a hydrocarbon mineral oil to the tubular article of Lunk et al in order to improve the mechanical properties and soften the article, as taught by Hert et al.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Apotheker (USPN 4,093,583); Ingmanson (USPN 3,324,229); Vostovich (USPN 4,303,574); Marin et al (USPN 3,769,370); Gilde et al (US 2003/0215592 A1); Takahashi et al (USPN 5,578,120).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Bruenjes whose telephone number is 571-272-1489.

The examiner can normally be reached on Monday thru Friday from 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Christopher P Bruenjes
Examiner
Art Unit 1772
CPB CPB
March 17, 2006

HAROLD PYON
SUPERVISORY PATENT EXAMINER
1772

3/20/06